IN THE CLAIMS

A complete listing of the current claims is provided below.

1. – 26. (Canceled).

27. (Previously Presented) An electronic device to generate artificial reverberation, comprising:

a signal processing engine that, when viewed in the time domain, convolves an input signal with an impulse response representing acoustic space;

a synthesizer communicatively coupled to said signal processing engine, said synthesizer to provide to said signal processing engine, when viewed in the time domain, a definition of said impulse response, said synthesizer comprising a first random number generator and a first density generator to provide, when viewed in the time domain, a first sequence of randomly spaced spikes, said synthesizer further comprising, a second random number generator and a second density generator to produce, when viewed in the time domain, a second sequence of randomly spaced spikes, wherein, said first and second sequences of randomly spaced spikes have, when viewed in the time domain, decay envelopes and maximum spacings between spikes that are user defined and customizable, wherein, each of the signal processing engine, the first and second random number generators and the first and second density generators are constructed with electronic circuitry.

28. (Previously Presented) The device of claim 27 wherein the synthesizer further comprises a high pass filter and a low pass filter, the high pass filter coupled downstream from the first random number generator and first density generator, the low pass filter coupled downstream from the second random number generator and the second density generator.

29. (Previously Presented) The device of claim 28 further comprising a time variant filter coupled downstream from said high pass filter and said low pass filter.

30. (Previously Presented) The device of claim 29 further comprising a variable gain amplifier coupled downstream from said time variant filter.

31. (Previously Presented) The device of claim 27 wherein the first and second random number generators and the first and second density generators are part of a first signal processing channel within said synthesizer, and said synthesizer further comprises a second signal processing channel, said second signal processing channel comprising third and fourth random number generators and third and fourth density generators to create third and fourth sequences of spikes.

32. (Previously Presented) The device of claim 31 wherein said synthesizer further comprises a third signal processing channel between said first and second signal processing channels, said third signal processing channel to cancel correlated signal portions of the first and second signal processing channels.

33. (Previously Presented) A method of generating artificial reverberation, comprising:

accepting first customizable user input;

accepting second customizable user input;

generating a signal that when viewed in the time domain comprises first and second sequences of spikes having decay envelopes defined by said first customizable user input and maximum spacings between spikes defined by said second customizable user input, said first sequence of spikes generated with a first random number generator and a first density generator, said second sequence of spikes generated with a second random number generator and a second density generator;

processing said signal with a signal processing channel to define, when viewed in the time domain, an impulse response of acoustic space;

when viewed in the time domain, convoluting with a signal processing engine said impulse response with an input signal to artificially reverberate said input signal, wherein, said first and second random number generators, said first and second density generators, said signal processing channel and said signal processing engine are constructed with electronic circuitry.

34. (Previously Presented) The method of claim 33 wherein said processing of said signal with a signal processing channel further comprises, when viewed in the time domain, passing

said first sequence of spikes through a high pass filter and passing said second sequence of spikes through a low pass filter.

35. (Previously Presented) The method of claim 34 wherein said processing of said signal with a signal processing channel further comprises, when viewed in the time domain, filtering with a time variant filter a signal formed from a combination of said high pass and low pass filters' respective output signals.

36. (Previously Presented) The method of claim 35 wherein said method further comprises amplifying an output signal of said time variant filter with a variable gain amplifier.

37. (Previously Presented) The method of claim 33 further comprising, when viewed in the time domain, processing third and fourth sequences of spikes with a second signal processing channel to define said impulse response.

38. (Previously Presented) The method of claim 37 further comprising cancelling correlated signal portions of the first and second signal processing channels.

39. (Currently Amended) A non-transitory storage medium containing stored processor executable instructions that when ~~processing~~ processed by a processor cause a method of generating artificial reverberation to be performed, said method comprising:

accepting first customizable user input;

accepting second customizable user input;

generating a signal that when viewed in the time domain comprises first and second sequences of spikes having decay envelopes defined by said first customizable user input and maximum spacing between spikes defined by said second customizable user input, said first sequence of spikes generated with a first random number generator and a first density generator, said second sequence of spikes generated with a second random number generator and a second density generator;

processing said signal with a signal processing channel to define, when viewed in the time domain, an impulse response of acoustic space;

when viewed in the time domain, convoluting with a signal processing engine said impulse response with an input signal to artificially reverberate said input signal.

40. (Previously Presented) The non-transitory storage medium of claim 39 wherein said method further comprises:

when viewed in the time domain, passing said first sequence of spikes through a high pass filter and passing said second sequence of spikes through a low pass filter.

41. (Previously Presented) The non-transitory storage medium of claim 40 wherein said method further comprises:

when viewed in the time domain, filtering with a time variant filter a signal formed from a combination of said high pass and low pass filters' respective output signals.

42. (Previously Presented) The non-transitory storage medium of claim 41 wherein said method further comprises:

amplifying an output signal of said time variant filter with a variable gain amplifier.

43. (Previously Presented) The non-transitory storage medium of claim 39 wherein said method further comprises:

processing third and fourth sequences of spikes with a second signal processing channel to define said impulse response.

44. (Previously Presented) The non-transitory storage medium of claim 43 wherein said method further comprises:

cancelling correlated signal portions of the first and second signal processing channels.